III. VERIZON VA'S COSTING METHODOLOGY (JDPL Issues II-1 TO II-1-c; II-2 TO II-2-c)

Q. What is the purpose of this section of the testimony?

A. This section of the testimony addresses AT&T/WorldCom's criticism of various calculations, methodologies, and assumptions that are used throughout Verizon VA's cost studies. In particular, we respond to the following points:

- AT&T/WorldCom criticize the "forward-looking-to-current" ("FLC") conversion factor that Verizon VA applies to its cost factors to account for the difference in the investment used to calculate Verizon VA's cost factors and the TELRIC investment to which those factors ultimately are applied. We show how AT&T/WorldCom's elimination of this factor would result in an inappropriate decrease in Verizon VA's costs that is not tied to any demonstrable cost reduction but instead is a mere mathematical sleight of hand.

- AT&T/WorldCom propose to decrease Verizon VA's cost factors by adjusting investment by a current cost to book cost ("CC/BC") ratio. We show that such an approach is unnecessary when the FLC is used, and is entirely improper *unless* something akin to an FLC (adjusted to incorporate the CC/BC ratio) is also applied.

- AT&T/WorldCom suggest that various costs and expenses identified by Verizon VA be reduced, first by an amount supposedly reflecting

merger savings, then by an amount that AT&T/WorldCom allege reflects improved maintenance costs, then by an amount supposedly reflecting the company's one-time IS expenses related to Y2K, and finally by the sum of all advertising expenses that Verizon VA would expend relative to its wholesale services. We demonstrate that these criticisms are unfounded, are unsupported by any specific facts, and amount to an effort to simply reduce Verizon VA's stated costs in any way possible.

AT&T/WorldCom also object to Verizon VA's proposed asset lives and cost of capital — two values that are reflected throughout Verizon VA's cost studies. We address these criticisms in the separate surrebuttal testimony of Dr. Lacey, Mr. Sovereign, and Dr. Vander Weide.

Q. Please summarize the AT&T/WorldCom Rebuttal Panel's critique of Verizon VA's costing approach.

A. Interestingly, although the Panel attacks various elements of Verizon VA's costing approach, the AT&T/WorldCom Rebuttal Panel does not contest the overall costing approach utilized by Verizon VA; in essence, notwithstanding their support for their own very different (and significantly flawed) model, AT&T/WorldCom have put forth no basis to question Verizon VA's proposed methodology for assessing UNE costs.

AT&T/WorldCom in their Rebuttal Panel testimony simply pick at various assumptions made in Verizon VA's calculations, proposing readjustments that are designed (not surprisingly) unilaterally to reduce Verizon VA's recoverable costs — by amounts that are not only quite significant but also entirely unjustified. The responses to each of the AT&T/WorldCom criticisms and proposed cost study adjustments are set forth below. As we show, the criticisms raised by AT&T/WorldCom are not valid, and, most importantly, do not detract in any way from the legitimacy of Verizon VA's general costing methodology.

A. VERIZON VA'S FORWARD-LOOKING-TO-CURRENT FACTOR (FLC) APPROPRIATELY IDENTIFIES FORWARD-LOOKING EXPENSES

Q. Please briefly explain the FLC factor.

A. The FLC factor is a conversion factor that Verizon VA applies to its annual cost factors (ACFs) to ensure that, when applied to TELRIC investments, the ACFs produce the identified forward-looking costs.[10]

Q. Please address AT&T/WorldCom's attack on Verizon VA's proposed FLC factor.

A. In general, AT&T/WorldCom argue that by applying the FLC, Verizon VA is attempting to recover its embedded costs; they refer to the FLC as a "thinly veiled attempt to recoup the operating costs of its embedded,

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[10] The need for the FLC factor is discussed in detail in the Panel Direct and below. *See also* VZ-VA Response to AT&T/WorldCom 1-16.

inefficient network."[11/] They allege that, while one would expect costs to be reduced in the forward-looking network, the FLC actually results in an *increase* in the expenses identified by application of Verizon's cost factors.[12/]

Q. Is there any truth to this argument?

A. No. In fact, it is a complete distortion of both the rationale for and the impact of the FLC. As explained in detail by the Verizon Panel Direct, the FLC is applied because Verizon VA's costing methodology calculates the ACFs by comparing expenses, which are adjusted to be forward-looking in various ways (discussed by the Verizon Panel Direct and below), to embedded investment. If these ACFs were applied, in "as is" form, to the TELRIC investment approved by the Commission at the end of this proceeding, they would produce expenses that are far lower than the identified, forward-looking adjusted expenses used in the calculations. This problem occurs because TELRIC investments are almost inevitably *lower* than embedded investments. There is no substantive reason, however, that the expenses should be reduced *beyond* the amount identified after application of forward-looking adjustments; the lowered expenses would in effect simply be the result of "double TELRICed" adjustments. The FLC, which represents an effort to state a ratio of

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11/ AT&T/WorldCom Rebuttal Panel at 81.
12/ *Id.*

embedded to TELRIC investments, is designed to readjust the ACFs conservatively so that they may be applied to TELRIC investments without producing this "double TELRICed" result.

Q. Has the application of the FLC proposed by Verizon VA been approved in any other UNE proceedings?

A. In a recent UNE proceeding in New York, Judge Linsider supported application of the FLC and recommended its approval.[13/] Rejecting the precise arguments raised by AT&T/WorldCom here, Judge Linsider explained that "the numerator of Verizon's proposed ACF is *forward-looking TELRIC* expense, yet the denominator remains historical investment . . . [t]hat . . . ratio is . . . applied to forward-looking TELRIC investment, thereby in effect double counting the TELRIC adjustment, as Verizon argues."[14/] Based on this analysis, Judge Linsider concluded, "The FLC does not convert TELRIC costs to embedded; it merely tries to restore a 'twice-TELRICed' cost calculation to one that recognizes TELRIC only once."[15/]

Q. Why can't Verizon utilize the reduced TELRIC investment amounts when calculating the ACFs in the first instance?

[13/] *Recommended Decision on Model Three Issues*, New York Case 98-C-1357 (New York State Public Service Commission, May 16, 2001) ("*Recommended Decision*").

[14/] *Id.* at 44.

[15/] *Id.*

A. The difficulty is that prior to completion of the UNE studies, the precise TELRIC investments are unknown and thus cannot be included in the ACF calculations themselves. Application of the FLC is therefore an estimated surrogate for the actual relationship between the TELRIC and embedded investments. Based on Judge Linsider's recommended approach in the New York proceeding, Verizon VA has conservatively approximated that the TELRIC investments are 80% of Verizon VA's existing investments — even though Judge Linsider in fact recommended a 75% FLC in New York based on actual data.[16/] The correctness of the application of the FLC can be shown with the following proof:

> As stated, $ACF_T = Exp_T / Inv_T$. Approximating that Inv_T = 80% x Inv_E where $_T$ means TELRIC and $_E$ means existing, then $ACF_T = Exp_T / (80\% \ Inv_E)$. Rearranging terms yields $ACF_T = [Exp_T / Inv_E] / 80\%$. Since $[Exp_T / Inv_E]$ represents the ACF as initially calculated, and 80% is the FLC, we end up with $ACF_T = ACF_{Calc} / FLC$.

Q. The AT&T/WorldCom Rebuttal Panel suggests that an FLC should actually reduce costs. [AT&T/WorldCom Rebuttal Panel at 76.] Is that true?

A. Once again, AT&T/WorldCom are simply misrepresenting the function and impact of the FLC. They begin their argument by stating that

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[16/] *Id.*

"expenses will decrease in a forward-looking network,"[17] a point with which Verizon VA generally agrees. Thus, if it were the case that Verizon VA used its actual incurred expenses in calculating its ACFs, rather than expenses that have been adjusted to be forward-looking, the resulting ACFs could possibly overstate expenses depending upon the investments to which they are applied. In that case, as AT&T/WorldCom suggest, a factor would have to be developed to adjust the ACFs to reflect forward-looking expense reductions. But — as AT&T/WorldCom consistently refuse to acknowledge, as Judge Linsider recognized, and as the Panel Direct explained — the incurred expenses identified by Verizon VA *already* have been adjusted to be forward-looking: Verizon VA reduced those expenses by applying forward-looking productivity gains, reflecting reduced maintenance expenses in connection with new copper cable placements, and removing retail-related costs.

Thus, Verizon VA does not disagree that expenses are generally reduced in the forward-looking network, and the FLC is not designed to produce increased expenses or return expenses to an "embedded" (*i.e.*, incurred) level. Rather, the FLC is designed to ensure that application of the ACFs to the TELRIC investment ultimately approved by this Commission will correctly identify the *forward-looking* expenses identified by Verizon VA through application of the forward-looking

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[17] AT&T/WorldCom Rebuttal Panel at 81.

adjustments just described. Thus, the FLC in effect *does* result in identifying reduced expenses — but it identifies expenses that are reduced to the level of the forward-looking adjusted expenses. It would *not* be appropriate, as AT&T/WorldCom suggest, to apply an FLC that arbitrarily reduced expenses even further.

Q. But doesn't the AT&T/WorldCom Rebuttal Panel claim that Verizon VA has *not* adjusted expenses for productivity or made any other forward-looking adjustments? [AT&T/WorldCom Rebuttal Panel at 81.]

A. They do make this claim, but it is simply wrong. As explained below and in the Verizon Panel Direct, Verizon VA adjusts copper cable repair dollars to reflect the latest design standards that would be used in the forward-looking network.[18/] Moreover, within each of the UNE studies provided, there is an application of productivity improvements to the expenses,[19/] and retail-avoided costs are removed as well. These

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[18/] *See* WP7."R" in VA Common Inputs\VA Part GG Factors Support/Part G-7 Network Factors\Part G-7a-VA Network Exp Factors.xls contained on Verizon VA's CD #2 provided as part of the filing on July 2, 2001.

[19/] Verizon VA's application of productivity was performed within the studies rather than within the factor developments. In other jurisdictions, productivity was applied in the factor development itself. It is unclear whether AT&T/WorldCom simply missed this aspect or believe that productivity must be applied in calculating the factor itself to have an impact; their response to VZ-VA 13-20(a) suggests that they in fact believe "the cost study provides no explicit adjustment to account for improved productivity." In any event, given the associative property of multiplication (*(A x B) x C = A x (B x C)*), the results are

productivity adjustments reflect a recognition of a forecasted change in the total network volume of business and the impact on total labor hours, as prepared by the Business Research group within Verizon.[20/]

Q. In opposing application of the FLC, AT&T/WorldCom argue that the expenses should be lower in connection with TELRIC investment, because the improved technology that underlies the reduced TELRIC investment is less "labor-intensive" and more "user-friendly," and thus has lower associated expenses. [AT&T/WorldCom Rebuttal Panel at 81.] Does Verizon VA disagree with this statement?

A. Verizon VA does not disagree that more sophisticated equipment often results in certain lower labor expenses. But as explained above, adjusting expenses to reflect these savings would not obviate the need for the FLC. Verizon VA's model already reflects the lower expenses that AT&T/WorldCom advocate. The productivity improvements that Verizon VA applies to reduce its expenses reflect precisely the expected cost-savings associated with improved technology. Productivity improvements are not a result of tomorrow's telephone workers becoming physically bigger, faster or stronger than yesterday's workers. Workers become more productive because they have available to them improvements in

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the same whether productivity factors ("*C*") are applied to the factor ("*B*") or in the study *("A" x "B")*. (Attachment A.)

[20/] *See* VZ-VA Response to AT&T/WorldCom 6-9, included in Attachment A.

telephone technology and/or process improvements that enable them to work more effectively. Those improvements are captured in the application of productivity adjustments in Verizon VA's studies, and thus, the expenses that the FLC-adjusted ACFs are designed to recover are precisely the productivity-reduced expenses that AT&T/WorldCom advocate. Without the FLC, those expenses would be *further* reduced, without justification.

Q. Do all expenses — including operation and maintenance expenses — fall as technology improves and equipment becomes more sophisticated?

A. No. Maintenance costs do not necessarily fall at all. The automobile industry provides an instructive example. Car quality and reliability clearly have improved over time; for instance, ten years ago, today's 100,000-mile maintenance-free engines did not exist. But while improved automobile quality and reliability may have resulted in fewer *instances* of maintenance problems, the increased sophistication of automobile technology has increased the complexity of solving those problems that do arise. The result has been an increase in the amount of time and the costs associated with each repair. The "U.S. Bureau of Labor Statistics-US City Average Motor Vehicle Maintenance and Repair" reports that for each $100 for repairs spent between 1982-84, Americans were spending

$183.60 by July 2001 (adjusted for inflation).[21/] In other words, the cost to maintain and repair an automobile in the United States has increased by 83.6% over the last 17 years, even as the technology becomes more sophisticated (and perhaps as a result of such increased sophistication).

Q. Has the same phenomenon been experienced as technology becomes more sophisticated in the telephone network?

A. Yes. The maintenance and repair expenses in Virginia associated with digital switches have tended to increase over the past several years.[22/] Since 1997, when 90% of Verizon's lines in Virginia were served via digital switches, these expenses per line have averaged a little over $13 annually, with the simple linear regression trend line showing a slight positive slope. Thus, while reliability has increased, the overall cost to maintain such reliability has increased slightly. And though AT&T/WorldCom suggest that Verizon VA has overstated expenses, it is instructive to note that Verizon VA's use of 1999 maintenance and repair data probably has resulted in an *understatement* of costs, because the digital switch expense per line for that year, at approximately $11.80 per line, was the lowest ever. In fact, as the data in the table below show, the digital switch expense number trended back up in 2000, consistent with the general trend indicating slightly upward-moving expenses.

[21/] *See* web site of U.S. Department of Labor, Bureau of Labor Statistics, at http://stats.bls.gov.

[22/] Account 6212 as reported in ARMIS.

TABLE 1

YEAR	EXPENSE ($000)	DIGITAL LINES	Expense/Line
1997	36,463	2,997,195	$12.17
1998	51,033	3,308,511	$15.42
1999	40,717	3,449,269	$11.80
2000	48,372	3,484,418	$13.88

Q. AT&T/WorldCom next claim that Verizon VA's use of the FLC suggests that it fails to recognize that the lower-cost, more efficient assets used in a forward-looking network will decrease cost, even aside from any "cost cutting measures" imposed by Verizon VA. [AT&T/WorldCom Rebuttal Panel at 82.] Please respond.

A. The argument is simply mystifying. Verizon VA never suggests that the only cost reductions that are appropriate to recognize are those that result from "cost cutting measures." Indeed, as noted, except as set forth above, Verizon VA generally agrees with AT&T/WorldCom's point that expenses likely to be experienced in a forward-looking network will be lower as a result of efficiencies inherent in the asset mix used in the new network. But, contrary to AT&T/WorldCom's argument, these efficiencies are reflected in the application of the network ACFs associated with the relevant class of plant: more efficient plant (from the perspective of network maintenance) has a lower network ACF. For example, AT&T/WorldCom argue that use of fiber rather than copper in the network should result in a significant reduction in expenses because fiber is more efficient. While AT&T/WorldCom's specific 88% reduction

is inconsistent even with AT&T/WorldCom's own adjusted workpapers,[23] the general suggestion that the efficiencies of fiber over copper should be reflected in expense calculations is perfectly consistent with Verizon VA's studies. The use of a higher proportion of fiber and DLC results in the application of the fiber and DLC network ACFs (which are lower than the ACFs associated with copper loops) to a higher proportion of unbundled loops. The result is lower overall network expenses than there would be in a network with more copper.

Q. AT&T/WorldCom only discuss the FLC with respect to the network factors. Do they not take issue with the FLC in other factors?

A. AT&T/WorldCom remove the FLC from all factors throughout Verizon's studies, although their testimony does not ever seek to explain how this could in any way be appropriate. In fact, even by AT&T/WorldCom's logic, it is not. If their argument that the FLC is unnecessary stems from the assumption that maintenance and repair expenses will be reduced in a linear fashion with investment levels because the reduced investment

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[23] We note that the data in the AT&T/WorldCom workpapers underlying their reduction percentage is wrong. To reach their proposed reduced ACF of 88%, they use an ACF for underground copper cable of 0.1523. However, their own workpapers demonstrate that their proposed underground copper ACF is 0.0208. *See* "WP1.Ntwk Fctr" in AT&T/WorldCom Rebuttal Workpapers CD\Restatement of VZ Cost Studies\Common Inputs\Part G-7 Network Factors\Part G-7a-VA Network Exp. Factors.xls. (Attachment C.) Using their actual proposed underground copper ACF results in a 15% reduction in operating expenses and not the 88% reduction in operating expenses that AT&T/WorldCom allege.

reflects more efficient network plant, it is difficult to see how this same argument supports a linear reduction in costs related to common overhead. The president's salary, for example, is not likely to drop as a result of providing a loop on fiber rather than copper, nor would there be any direct correlation in many related overhead categories. Similarly, other support and marketing costs are impervious to the underlying technology choice and the related investment levels. Accordingly, once these costs have been rendered forward-looking, as appropriate, there is no reason to reduce them as a result of lowered TELRIC investment levels. AT&T/WorldCom's Rebuttal Panel is simply silent on this adjustment that AT&T/WorldCom nonetheless make in their supporting workpapers, [24/] presumably because there is no plausible rationale for it.

Q. Please address AT&T/WorldCom's claim that "Verizon has not provided any information that suggests that the discounts new entrants would be able to achieve in a TELRIC network are more aggressive or favorable than those that Verizon has been able to achieve in building its embedded network." [ATT/WorldCom Rebuttal Panel at 84.]

[24/] *See* "Verizon North" (Column B) and "Verizon South" (Column B) in AT&T/WorldCom Rebuttal Workpapers CD\Restatement of VZ Cost Studies\Common Inputs\Part G-5 Marketing Factor\Part G-5d-Mktng. Factor Rev Prod Invest.xls. (Attachment C.)

A. Quite frankly, this statement is very puzzling. Verizon has not made such a claim, and it is entirely unclear how AT&T/WorldCom believe this relates to the application of the FLC.[25/] The FLC is applied because TELRIC investment is lower than embedded investment; it has nothing to do with discounts that Verizon may obtain as compared to those obtained by its competitors.

Q. Should the Commission adopt AT&T/WorldCom's proposal to eliminate the FLC?

A. No. Verizon's proposed FLC factor ensures that forward-looking expenses are properly considered rather than artificially understated.

B. VERIZON VA'S USE OF THE FLC FACTOR IS MORE APPROPRIATE FOR THESE STUDIES THAN APPLICATION OF A CC/BC RATIO

Q. Please explain the AT&T/WorldCom Rebuttal Panel's argument concerning the need for a CC/BC ratio in the cost studies. [AT&T/WorldCom Rebuttal Panel at 85.]

A. AT&T/WorldCom suggest that Verizon should be required to use a CC/BC ratio to bring embedded investment up to current dollar levels.

[25/] For support of this contention, AT&T/WorldCom point to Verizon VA's statement in the Direct Panel that there is no basis "to assume that aggressive future discounts in material prices of equipment would produce reductions of like magnitude in the maintenance and administration costs of that equipment." AT&T/WorldCom Rebuttal Panel at 84 (citing Direct Panel at 71). This sentence simply has nothing at all to do with the point AT&T/WorldCom seek to make.

The AT&T/WorldCom Rebuttal Panel suggests that this is necessary in order to make the investment used in the denominator of Verizon VA's cost factors consistent with the expenses in the numerator of the factors, because the expenses are calculated based on 1999 data while the investment is stated in terms of historical dollars.

Q. What is Verizon's position concerning application of the CC/BC ratio?

A. There is nothing inherently wrong with the use of the CC/BC ratio. In the context of a TELRIC proceeding, however, use of a CC/BC ratio without something akin to the FLC (but adjusted to reflect use of the CC/BC-adjusted investment rather than historical embedded investment) would produce inaccurate and incomplete cost results.

CC/BC ratios do nothing more than convert the expression of embedded investment into current dollars. For example, a CC/BC ratio is designed to estimate how much an Apple computer purchased in 1987 would cost in today's dollars. Application of a 1999-based CC/BC ratio to Verizon VA's historical investment would thus calculate how much it would cost to replicate the entire existing network in 1999 dollars. This number would then become the denominator in Verizon VA's ACF calculations, with the numerator being 1999 expenses — *adjusted to be forward-looking*.

If these new CC/BC-adjusted ACFs were applied to the reduced TELRIC investments ultimately approved in these proceedings, the problem identified by Judge Linsider would still exist: the TELRIC investment would still be lower than the historical, CC/BC-adjusted investment used to calculate the ACFs, and it would reflect a different underlying network architecture and mix of assets. Accordingly, something like the FLC factor would have to be applied. However, while the FLC used by Verizon VA in these proceedings is calculated by comparing embedded investment in actual dollars to TELRIC investment, the FLC-substitute that would be used where CC/BC ratios have been applied would have to compare CC/BC adjusted investment to TELRIC investment. But applying this FLC substitute to ACFs developed by using CC/BC-adjusted investment should yield precisely the same costs as those that result from skipping the CC/BC adjustment altogether and utilizing Verizon VA's FLC factor. Indeed, Verizon VA developed the FLC precisely because it is a less cumbersome means of producing the same results.[26/]

[26/] For example, suppose the TELRIC investment to embedded investment ratio is approximately 80%, and suppose the CC/BC investment is approximately 1.35. The FLC_{calc} (*i.e.*, the FLC as calculated) would equal TELRIC investment/embedded investment, or 80%. The FLC_{adj} (*i.e.*, the new FLC calculation adjusted for the CC/BC ratio) would equal TELRIC investment/[embedded investment x CC/BC ratio], or 80%/1.35% = 59.3%. Suppose further that the *forward-looking* expense equal $1 million, and the embedded investment for a particular account is $10 million. The $ACF_{embedded}$